

Please amend the claims as follows.

1. (Currently amended) A recliner device for a vehicle seat,
said vehicle seat comprising a seat back and a seat cushion;
said recliner device comprising:
a first bracket provided at a side of said seat back and extending downwardly from the
side of said seat back;
said first bracket having a lower end portion;
a second bracket provided at a side of said seat cushion and extending rearwardly from
said side of said seat cushion;
said second bracket having a rear end portion;
said first bracket being pivotally connected at said lower end portion thereof to said
rear end portion of said second bracket by means of a supporting pin with said lower end
portion thereof being overlapped on said rear end portion of said second bracket, whereby said
seat back is pivotable around said supporting pin in such a manner that an attitude of said seat
back is changed to a vertically standing posture, a forwardly inclined posture or a rearwardly
inclined posture relative to said seat cushion;
said lower end portion of said first bracket having spaced apart notches formed at a
circumferential edge thereof so as to be coaxial with said supporting pin;
a locking pin having an inner end portion and an outer end portion;
said locking pin penetrating said rear end portion of said second bracket so as to be
axially movable and protruding toward said circumferential edge of said lower end portion of
said first bracket;
a spring mounted around said locking pin for urging said locking pin toward said
circumferential edge of said lower end portion of said first bracket and causing said inner end
portion of said locking pin to be engaged with any one of said notches, to thereby allow said
seat back to be maintained in said vertically standing posture, said forwardly inclined posture or
said rearwardly inclined posture;
a receiving base mounted on an outer surface of said rear end portion of said second
bracket and coaxially surrounding said ~~operating~~ locking pin;
said receiving base comprising a substantially ring-shaped receiving portion;
an operating means mounted to said outer end portion of said locking pin so as to be
opposed to said receiving base; and
said operating means comprising an operating knob having a substantially cylindrical

section; and

cooperating cam surface means on said substantially cylindrical section of said operating means and said substantially ring-shaped portion of said receiving base; wherein when said operating means is rotated relative to said receiving base, said locking pin is axially moved away from said circumferential edge of said lower end portion of said first bracket and then disengaged from said one of said notches with which said inner end portion of said locking pin has been engaged until now, whereby said seat back is allowed to be pivoted around said supporting pin.

said cooperating cam surface means comprising a first cam surface formed on a circumferential edge of said substantially cylindrical section which is opposed to a circumferential edge of said substantially ring-shaped receiving portion, and a second cam surface formed on said circumferential edge of said substantially ring-shaped receiving portion;

said first cam surface comprising first and second crest portions spaced apart from each other around said circumferential edge of said substantially cylindrical section, and first and second spaced apart valley portions each being disposed between said first and second crest portions and continuously connected to said first and second crest portions;

said second cam surface comprising third and fourth crest portions spaced apart from each other around said circumferential edge of said substantially ring-shaped receiving portion, and third and fourth spaced apart valley portions each being disposed between said third and fourth crest portions and continuously connected to said third and fourth crest portions;

said first and second crest portions and said third and fourth crest portions being engaged with said third and fourth valley portions and said first and second valley portions, respectively, due to an action of said spring; and

each of said crest portions having a height enough to allow said locking pin to be axially moved so as to be disengaged from said one of the said notches of said first bracket;

wherein when said operating means is rotated relative to said receiving base, said first and second crest portions and said third and fourth crest portions are shifted from said third and fourth valley portions and said first and second valley portions, respectively, so that said locking pin is axially moved away from said circumferential edge of said lower end portion of said first bracket and then disengaged from said one of said notches with which said inner end portion of said locking pin has been engaged until now, whereby said seat back is allowed to be pivoted around said supporting pin.

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

10. (Cancelled)

11. (New) A recliner device according to claim 1, wherein said first and second crest portions are spaced apart from each other at intervals of about 180 degrees around said circumferential edge of said substantially cylindrical section, and said third and fourth crest portions are spaced apart from each other at intervals of about 180 degrees around said circumferential edge of said substantially ring-shaped portion.

12. (New) A recliner device according to claim 1 or 11, wherein said first and second cam surface have the same shape.

13. (New) A recliner device according to claim 1 or 11, wherein said receiving base comprises a substantially plate-shaped body, said substantially ring-shaped receiving portion being provided at said substantially plate-shaped body, said substantially plate-shaped body being fixed on said outer surface of said rear end portion of said second bracket with said ring-shaped receiving portion surrounding said locking pin, and wherein said operating knob

has a boss portion coaxial with said substantially cylindrical section, said boss portion being provided with an axially protruding piece, one of an inner surface of said axially protruding piece and an outer surface of said ring-shaped receiving portion being formed with at least one linear groove, the other of said inner surface of said axially extending protruding piece and said outer surface of said ring-shaped receiving portion being provided with at least one projection, said at least one groove and said at least one projection being adapted to be releasably engaged with each other.

14. (New) A recliner device according to claim 12, wherein said receiving base comprises a substantially plate-shaped body, said substantially ring-shaped receiving portion being provided at said substantially plate-shaped body, said substantially plate-shaped body being fixed on said outer surface of said rear end portion of said second bracket with said ring-shaped receiving portion surrounding said locking pin, and wherein said operating knob has a boss portion coaxial with said substantially cylindrical section, said boss portion being provided with an axially protruding piece, one of an inner surface of said axially protruding piece and an outer surface of said ring-shaped receiving portion being formed with at least one linear groove, the other of said inner surface of said axially extending protruding piece and said outer surface of said ring-shaped receiving portion being provided with at least one projection, said at least one groove and said at least one projection being adapted to be releasably engaged with each other.

15. (New) A recliner device according to claim 13, wherein said plate-shaped body of said receiving base has a dowel provided on a back side thereof and projecting from said back side, and wherein said second bracket has a dowel hole formed in said rear end portion thereof, said dowel of said receiving base being fitted in said dowel hole of said second bracket.

16. (New) A recliner device according to claim 14, wherein said plate-shaped body of said receiving base has a dowel provided on a back side thereof and projecting from said back side, and wherein said second bracket has a dowel hole formed in said rear end portion thereof, said dowel of said receiving base being fitted in said dowel hole of said second bracket.

17. (New) A recliner device for a vehicle seat,
said vehicle seat comprising a seat back and a seat cushion;
said recliner device comprising:

a first bracket provided at a side of said seat back and extending downwardly from the side of said seat back;

said first bracket having a lower end portion;

a second bracket provided at a side of said seat cushion and extending rearwardly from said side of said seat cushion;

said second bracket having a rear end portion;

said first bracket being pivotally connected at said lower end portion thereof to said rear end portion of said second bracket by means of a supporting pin with said lower end portion thereof being overlapped on said rear end portion of said second bracket, whereby said seat back is pivotable around said supporting pin in such a manner that an attitude of said seat back is changed to a vertically standing posture, a forwardly inclined posture or a rearwardly inclined posture relative to said seat cushion;

said lower end portion of said first bracket having spaced apart notches formed at a circumferential edge thereof so as to be coaxial with said supporting pin;

a locking pin having an inner end portion and an outer end portion;

said locking pin penetrating said rear end portion of said second bracket so as to be axially movable and protruding toward said circumferential edge of said lower end portion of said first bracket;

a spring mounted around said locking pin for urging said locking pin toward said circumferential edge of said lower end portion of said first bracket and causing said inner end portion of said locking pin to be engaged with any one of said notches, to thereby allow said seat back to be maintained in said vertically standing posture, said forwardly inclined posture or said rearwardly inclined posture;

a receiving base of a substantially ring-shape mounted on an outer surface of said rear end portion of said second bracket and coaxially surrounding said locking pin;

an operating means mounted to said outer end portion of said locking pin so as to be opposed to said receiving base;

said operating means comprising an operating knob having a substantially cylindrical section; and

cooperating cam surface means on said substantially cylindrical section of said operating means and said receiving base;

said cooperating cam surface means comprising a first cam surface formed on a circumferential edge of said substantially cylindrical section which is opposed to a circumferential edge of said substantially ring-shaped receiving base, and a second cam surface

formed on said circumferential edge of said substantially ring-shaped receiving base;

said first cam surface comprising first and second axially extending surface portions spaced apart from each other around said circumferential edge of said substantially cylindrical section, a first circumferentially sloping surface portion descending from a tip edge of said first axially extending surface portion to a root point of said second axially extending surface portion, and a second circumferentially sloping surface portion descending from a tip edge of said second axially extending surface portion to a root point of said first axially extending surface portion;

said second cam surface comprising third and fourth axially extending surface portions spaced apart from each other around said circumferential edge of said ring-shaped receiving base, a third circumferentially sloping surface portion descending from a tip edge of said third axially extending surface portion to a root point of said fourth axially extending surface portion, and a fourth circumferentially sloping surface portion descending from a tip edge of said fourth axially extending surface portion to a root point of said third axially extending surface portion; and

said first circumferentially sloping surface portion and said second circumferentially sloping surface portion being engaged with said third circumferentially sloping surface portion and said fourth circumferentially sloping surface portion, respectively, due to an action of said spring;

wherein when said operating means is rotated relative to said receiving base, said first circumferentially sloping surface portion and said second circumferentially sloping surface portion are shifted from said third circumferentially sloping surface portion and said fourth circumferentially sloping surface portion, respectively, so that said locking pin is axially moved away from said circumferential edge of said lower end portion of said first bracket and then disengaged from said one of said notches with which said inner end portion of said locking pin has been engaged until now, whereby said seat back is allowed to be pivoted around said supporting pin.

18. (New) A recliner device according to claim 17, wherein said first and second axially extending surface portions are spaced apart from each other at intervals of about 180 degrees around said circumferential edge of said substantially cylindrical section, and said third and fourth axially extending surface portions are spaced apart from each other at intervals of about 180 degrees around said circumferential edge of said ring-shaped receiving base.

19. (New) A recliner device according to claim 17 or 18, wherein said circumferentially sloping surface portions formed on one of said circumferential edge of said substantially cylindrical section and said circumferential edge of said substantially ring-shaped receiving base have lengths shorter than lengths of said circumferentially sloping surface portions formed on the other of said circumferential edge of said substantially cylindrical section and said circumferential edge of said substantially ring-shaped receiving base, said axially extending surface portions formed on the one of said circumferential edge of said substantially cylindrical section and said circumferential edge of said substantially ring-shaped receiving base being provided at their tip edges with stepper projections.